

## ABSTRACT

A wireless signal switching circuit for switching a plurality of wireless transmitter signals or a plurality of wireless receiver signals with low loss in a dual mode compatible mobile phone (cellular phone) or other mobile wireless communication apparatus having for example a triple band GSM system as a first communication system and for example a UMTS system as a second communication system is provided. A wireless signal switching circuit 1 has a signal route switch 20 of a F2 or F3 transmission and reception system, a signal route switching circuit 30 of an F1 or UMTS transmission and reception system having a diplexer 31, and a 90 degree phase rotation circuit 40. Note that the relationship of frequencies is  $F1 \leq F2 < F3$ .

15 The 90 degree phase rotation circuit 40 has the characteristic that the phase of a signal of F2 or F3 is rotated by 90 degrees when a switch element 44 is set to a closed state, and a high frequency of UMTS is attenuated when the switch element 44 is set to an opening state. The 90 degree phase rotation circuit 40 separates the signal route switch 20 of the F2 or F3 transmission and reception system and the signal route switching circuit 30 of the F1 or UMTS transmission and reception system when using the F2 or F3 transmission and reception system and has a passing characteristic when

25 using the F1 or UMTS transmission and reception system.